



COLUMBIA

OWNER'S MANUEL



MOTOCULTEUR

216-447-597

WALK-BEHIND TILLER

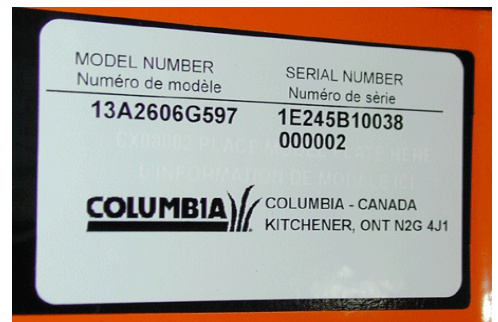


IMPORTANT !

Inscrivez ci-dessous le no de modèle et le code du fabricant qui se trouvent sur la machine. Vous devez fournir ces numéros, ainsi que la date d'achat, pour bénéficier de tout service sous garantie.

IMPORTANT !

Record the Model No. and Mfg. Code which appear on your unit in the space provided. You must have these numbers, along with the date of purchase, in order to receive warranty or service.



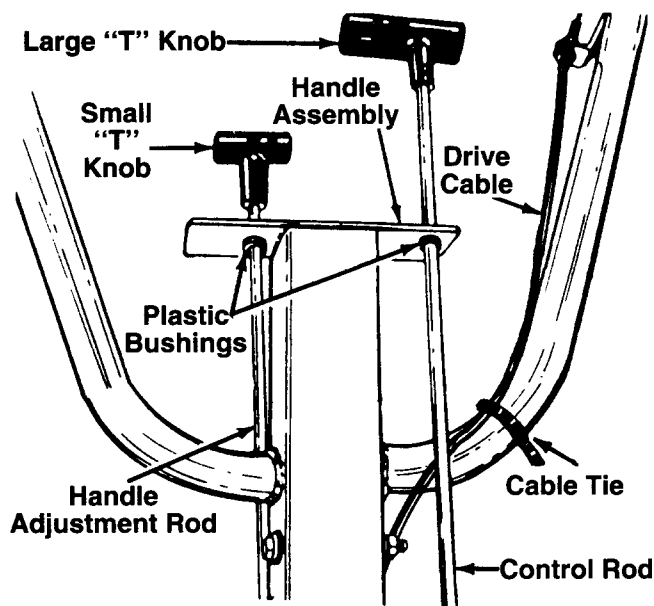


FIGURE 8.

ATTACHING THE RODS (Hardware D)

1. Insert the threaded end of control rod **up** through the plastic bushing on the left side of handle assembly. See figure 8. Thread the large "T" knob on the end of control rod.
2. Insert the threaded end of handle adjustment rod **up** through the plastic bushing on the right side of handle assembly. Thread the small "T" knob on the end of handle adjustment rod.
3. Place flat washer, then rubber washer on the hooked end of control rod. Insert end of control rod into the indicator bracket on top of the shift cover, and secure with hairpin clip. See figure 9.
4. With the handle adjustment rod beneath the handle assembly, insert the hooked end of handle adjustment rod into the positioner bracket as shown in figure 10. Secure with cotter pin, bending ends of pin in opposite directions.

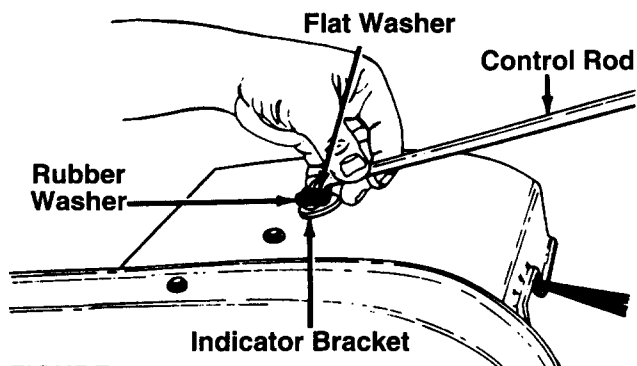


FIGURE 9.

CHECKING THE CLUTCH ADJUSTMENT

IMPORTANT: Service the engine with oil and gasoline before checking this adjustment. Refer to the separate engine manual packed with your tiller.

- a. Position the tiller so the front counterweight is against a solid object, such as a wall. With the gear selection lever in NEUTRAL, start the engine. Refer to the separate engine manual.
- b. Standing on the right side of the tiller, examine the belt (inside the belt cover). It should not be turning.

If the belt turns with the unit in neutral, adjust by moving the hex nut below the cable bracket **down** a few turns. See figure 11. Tighten the upper hex nut against the bracket.

- c. Now move the shift lever to FORWARD (Wheels Forward) position. Carefully engage the clutch by squeezing the clutch lever against the left handle. The wheels should spin.

If the wheels do not spin with the unit in forward, adjust by moving the hex nut which is above the cable bracket **up** a few turns. Tighten the bottom hex nut against the bracket.

Recheck both adjustments, and readjust as necessary.

NOTE: If you reach the point that additional adjustment is needed, remove the belt cover and move the hex nuts at the other end of the cable towards the end of the casing. Then readjust the hex nuts at the handle.

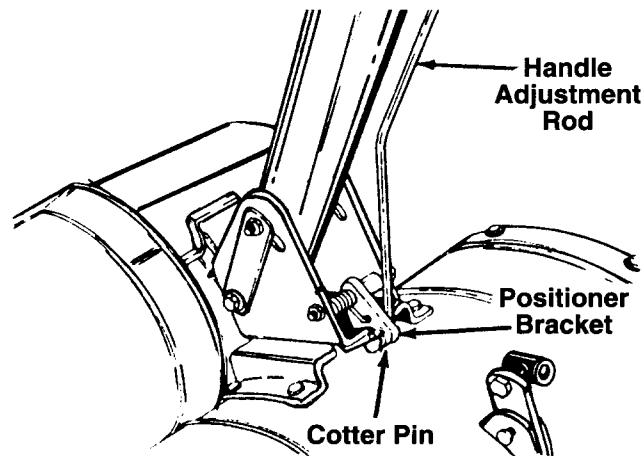


FIGURE 10.

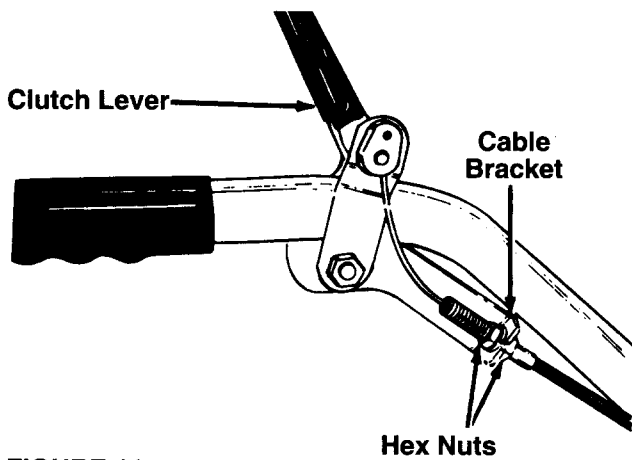


FIGURE 11.

TIRE PRESSURE

The tires on your unit may be over-inflated for shipping purposes. Reduce the tire pressure before operating the unit. Recommended operating tire pressure is approximately 12 p.s.i. (check sidewall of tire for tire manufacturer's recommended pressure).



WARNING: Maximum tire pressure under any circumstances is 30 p.s.i. Equal tire pressure should be maintained on both tires.

CONTROLS

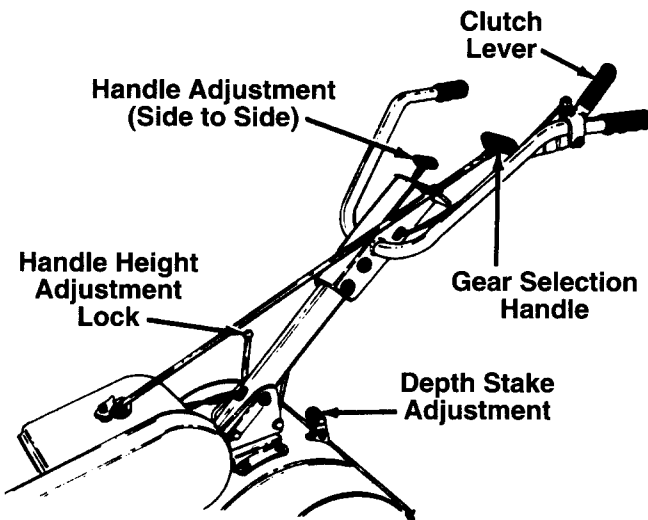


FIGURE 12.

NEUTRAL—Transmission is in neutral.

REVERSE—Reverse wheel drive.

FORWARD Modes:

Wheels Forward— Forward wheel drive only.

Tines Reverse— Forward wheel drive and reverse tine drive.

Tines Forward— Forward wheel and tine drive.



WARNING: Make certain unit is in NEUTRAL when starting the engine.

THROTTLE CONTROL

The throttle control lever is located on the engine. It controls the engine speed and stops the engine. See figure 13.

GEAR SELECTION HANDLE

The gear selection handle is located toward the left side of the tiller. It is used to select NEUTRAL, REVERSE, or one of the FORWARD modes (see above). Pull or push the handle so that the indicator on top of shift cover points to the operating mode desired. See figure 12.

CLUTCH LEVER

The clutch lever is located on the left handle. See figure 13. Squeezing the clutch lever against the handle engages the wheel and tine drive mechanisms.

DEPTH STAKE

The depth bar controls the tilling depth. Refer to "How to Use Your Tiller" section on page 10.

HANDLE ADJUSTMENT (See Figure 12)

The handle may be adjusted to be in line with the tiller, or swung to the left or right so the operator is not walking in the freshly tilled soil.

To adjust the handle position from side to side, pull the handle adjustment lever back, pivot the tiller handle to desired position and release the lever.

The handle may also be adjusted to the height desired. Loosen the handle height adjustment lock a few turns. Pivot handle up or down to desired position. Tighten lock.

OPERATION

NOTE: Engine is shipped without oil.



WARNING: Before operating the tiller, be certain to read "How to Use Your Tiller" on pages 10 and 11. Use the reverse tine drive when tilling virgin ground, sod or hard soil. Use the forward tine drive when cultivating or tilling soft ground.

BEFORE STARTING

1. Service engine with oil as instructed in the separate engine manual packed with your unit.
2. Fill fuel tank with clean, fresh, lead-free, low-lead or regular grade leaded gasoline.
3. Be certain to check clutch adjustment as described in "Checking the Clutch Adjustment" section of Assembly Instructions.

TO START ENGINE



WARNING: BE SURE NO ONE IS STANDING IN FRONT OF THE TILLER WHILE THE ENGINE IS RUNNING OR BEING STARTED.

1. Place gear selection lever in NEUTRAL.
2. Turn fuel shut-off to ON position. See figure 13.
3. Place the engine shut-off switch in ON position.
4. Place the throttle control lever in FAST position.
5. Move choke lever to CHOKE position.

NOTE: A warm engine may not require choking.

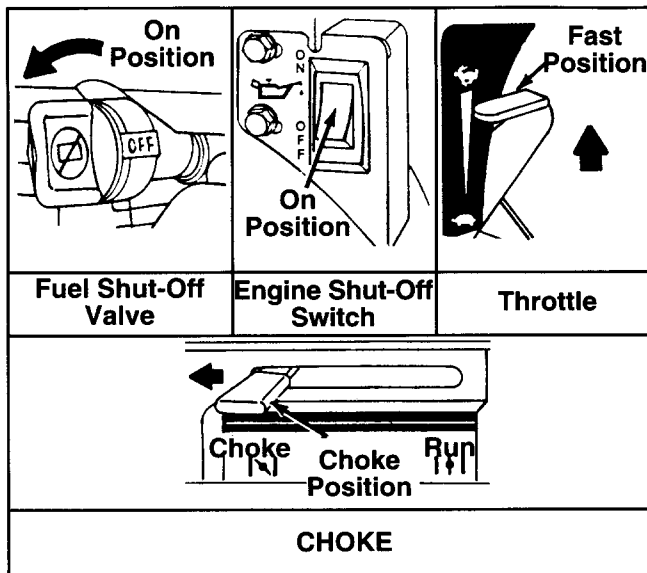


FIGURE 13.

6. Stand at side of tiller. Grasp the starter handle and pull out slowly, until it pulls slightly harder. Let rope rewind slowly.
7. Pull starter handle rapidly. Do not allow handle to snap back. Allow it to rewind slowly while keeping a firm hold on the starter handle.

8. Repeat steps 6 and 7 until engine starts.

9. As engine warms up and begins to operate evenly, move choke lever gradually to RUN position. If engine falters, return to choke position, then slowly move to RUN position.

Refer to engine manual for additional engine information.

TO STOP ENGINE

1. Move throttle control to SLOW position.
2. Move the engine shut-off switch to the OFF position.
3. Disconnect spark plug wire and ground to prevent accidentally starting while equipment is unattended.
4. Close fuel shut-off valve when not operating tiller to prevent fuel leakage.

NOTE: After the first ten hours of operation, recheck the clutch adjustment. Refer to "Checking the Clutch Adjustment" section of the Assembly Instructions.

HOW TO USE YOUR TILLER



WARNING: When operating the tiller for the first time, use the depth stake setting that gives 1-1/2 inches of tilling depth (second hole from the top). See figure 14.

Tilling depth is controlled by the depth stake which can be adjusted to five different settings. See figure 14. Adjust the side shields as shown in figure 15, as you adjust the depth stake. Be certain spark plug wire is disconnected and grounded against the engine.

1. When using the tiller for the first time, use the second adjustment hole from the top (1-1/2" of tilling depth). See figure 14.

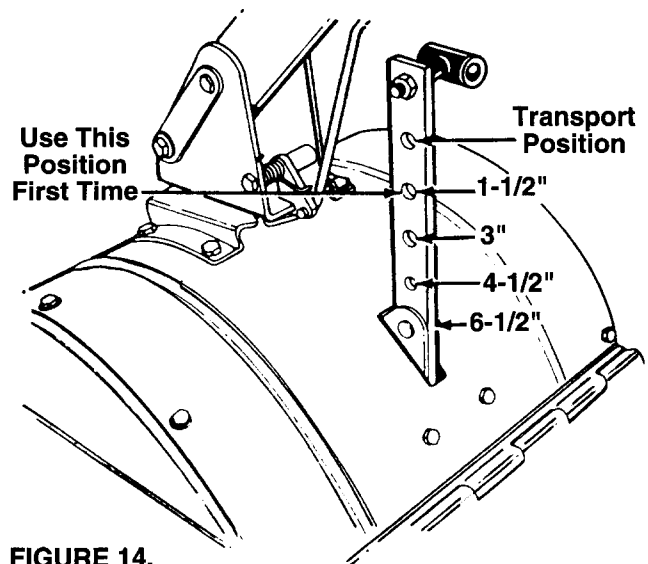


FIGURE 14.

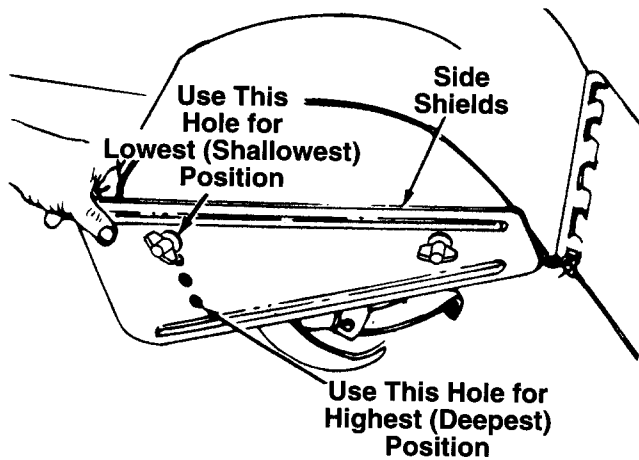


FIGURE 15.

2. When breaking up sod and for shallow cultivation, use the setting which gives 1-1/2" of tilling depth (second hole from the top). Place the side shields in their lowest position. For further depth, raise the depth stake and side shields and make one or two more passes over the area.
3. When tilling loose soil, depth stake may be raised to its highest position (use bottom adjustment hole) to give the deepest tilling depth. Raise the side shields to their highest position.
4. To transport tiller, lower the depth stake (use top adjustment hole).

To adjust the depth stake, remove the clevis pin and hairpin clip. See figure 14. Move the depth stake to the desired setting.

To adjust the side shields, remove the wing nuts. See figure 15. Place side shield in position desired. Replace wing nuts and tighten securely.

To operate the tiller:

1. Select the depth stake setting.
2. Start engine as instructed on page 10.
3. Move gear selection handle to one of the forward modes or reverse. **Use the reverse tine drive when tilling virgin ground, sod or hard soil. Use the forward tine drive when cultivating or tilling soft ground.**

IMPORTANT: When using the forward tine drive, lower the depth stake (use a shallower tilling depth) to make certain the tines do not run across the ground.



WARNING: Do not move the gear selection handle with the wheels or tines engaged. Make certain the unit is stopped completely before changing the gear selection.

4. Squeeze the clutch lever against the handle to engage the wheels and tines.

NOTE: Make certain the gear selection indicator is correctly positioned before engaging the clutch handle. If it is between gears, the engine will stall.

To transport tiller, **do not** engage the tines. Select the wheel drive only.



WARNING: Do not push down on the handles so that the wheels are lifted off the ground while using the reverse tine drive, or the tiller could move backward and cause personal injury.

For best results, it is recommended the garden be tilled twice (lengthwise, then widthwise) to pulverize the soil.

ADJUSTMENTS

HANDLE ADJUSTMENT

The handle may be adjusted to be in line with the tiller, or swung to the left or right. The handle height may also be adjusted. Refer to the Control section for details of handle adjustment.

BELT TENSION ADJUSTMENT

Periodic adjustment of the belt tension may be required due to normal stretch and wear on the belt. Adjustment is needed if the tines or wheels seem to hesitate while turning, but the engine maintains the same speed.

To adjust to the tension on the belt, refer to clutch adjustment information in "Checking the Clutch Adjustment" section of the Assembly Instructions.

THROTTLE ADJUSTMENT

To adjust throttle control lever, loosen or tighten wing nut until throttle control lever moves with some resistance and still remains in desired position when engine is running. See figure 16.



FIGURE 16.

CARBURETOR ADJUSTMENT



WARNING: If any adjustments are made to the engine while the engine is running, (e.g. carburetor), disengage all clutches and tines. Keep clear of all moving parts. Be careful of heated surfaces and muffler.

Never make unnecessary adjustments. The factory settings are correct for most applications. If adjustments are needed, refer to the separate engine manual packed with your tiller.

LUBRICATION

Transmission—The transmission is pre-lubricated and sealed at the factory. It requires no checking unless the transmission is disassembled. To fill with grease, lay the right half of the transmission on its side. Add 30 ounces of Shell grease. Assemble the left half to it. This grease can be obtained at your nearest authorized dealer. Order part number 737-0148.

Clutch Lever—Lubricate the pivot point on the clutch lever and the cable at least once a season with light oil. The control must operate freely in both directions.

Pivot Points—Lubricate all pivot points and linkages at least once a season with light oil.

MAINTENANCE



WARNING: Disconnect the spark plug wire and ground it against the engine before performing any repairs or maintenance.

ENGINE

Refer to the separate engine manual for engine maintenance instructions.

Maintain **engine oil** as instructed in the separate engine manual packed with your unit. Read and follow instructions carefully.

Service **air cleaner** every ten hours under normal conditions. Clean every hour under extremely dusty conditions. Poor engine performance and flooding usually indicates that the air cleaner should be serviced. To service the air cleaner, refer to the separate engine manual packed with your unit.

IMPORTANT: Never run your engine without air cleaner completely assembled.

The **spark plug** should be cleaned and the gap reset every 25 hours of engine operation. Spark plug replacement is recommended at the start of each tiller season; check engine manual for correct plug type and gap specification.

Clean the engine regularly with a cloth or brush. Keep the cooling system (blower housing area) clean to permit proper air circulation which is essential to engine performance and life. Be certain to remove all dirt and combustible debris from muffler area.

CLEANING THE TINE AREA

Clean the underside of the tine shield after each use. The dirt washes off the tines easier if washed off immediately instead of after it dries.

TIRES

Recommended operating tire pressure is approximately 12 p.s.i. (check sidewall of tire for tire manufacturer's recommended pressure). Maximum tire pressure under any circumstances is 30 p.s.i. Equal tire pressure should be maintained on both tires.

When installing a tire to the rim, be certain rim is clean and free of rust. Lubricate both the tire and rim generously. Never inflate to over 30 p.s.i. to seat beads.



WARNING: Excessive pressure (over 30 p.s.i.) when seating beads may cause tire/rim assembly to burst with force sufficient to cause serious injury.

BELT REPLACEMENT



CAUTION: Do not use an off-the-shelf belt.

Your tiller has been engineered with a belt made of special material (Kevlar Tensile) for longer life and better performance. It should not be replaced with an off-the-shelf belt.

If belt replacement is required, order belt or belts by part number from your nearest authorized dealer. Part No. 754-0434—"V" Belt

1. Disconnect and ground the spark plug wire against the engine.
2. Remove the belt cover from the left side of the tiller as follows. See figure 17.
 - a. Remove two self-tapping screws and flat washers from the top of belt cover.
 - b. Remove the hex cap nut and flat washer from the side of the belt cover. Remove the hex nut and flat washer at the bottom of the front of the cover.

OFF-SEASON STORAGE

If the tiller will not be used for a period longer than 30 days, the following steps should be taken to prepare the tiller for storage.

1. Clean the exterior of engine and the entire tiller thoroughly. Lubricate the tiller as described in the lubrication instructions.
2. Refer to the engine manual for correct engine storage instructions.
3. Wipe tines with oiled rag to prevent rust.
4. Store tiller in a clean, dry area. Do not store next to corrosive materials, such as fertilizer.

NOTE: When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rustproof the equipment. Using a light oil or silicone, coat the equipment, especially any springs, bearings and cables.

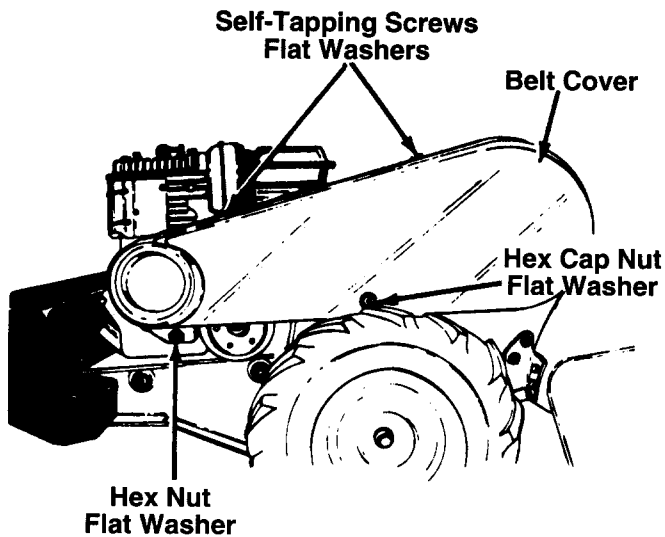


FIGURE 17.

3. Remove the hex bolt (belt keeper) located beneath the engine pulley. See figure 18.
4. Remove belt. Reassemble new belt, following instructions in reverse order.

NOTE: Upon reassembly, make certain the belt is routed over the idler pulley and inside of belt keepers by engine pulley. See figure 18.

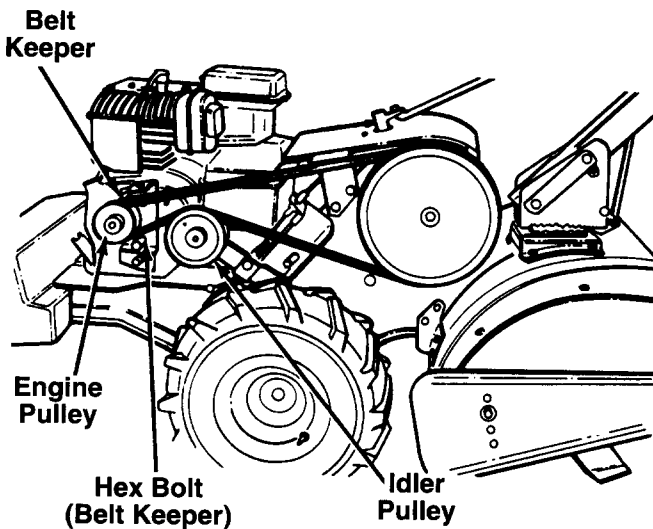


FIGURE 18.

TROUBLE SHOOTING GUIDE

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	<ol style="list-style-type: none"> 1. Spark plug wire disconnected. 2. Engine shut-off switch in OFF position. 3. Fuel shut-off valve closed. 4. Fuel tank empty, or stale fuel. 5. Throttle control lever not in correct starting position. 6. Engine flooded. 7. Faulty spark plug. 	<ol style="list-style-type: none"> 1. Connect wire to spark plug. 2. Place engine shut-off switch in ON position. 3. Open fuel shut-off valve. 4. Fill tank with clean, fresh gasoline. 5. Move throttle lever to FAST position. 6. Crank engine with throttle in FAST position. 7. Clean, adjust gap or replace.
Engine runs erratic	<ol style="list-style-type: none"> 1. Unit running on CHOKE. 2. Spark plug wire loose. 3. Stale fuel. 4. Vent in gas cap plugged. 5. Water or dirt in fuel system. 6. Dirty air cleaner. 7. Carburetor out of adjustment. 	<ol style="list-style-type: none"> 1. Move choke lever to OFF position. 2. Connect and tighten spark plug wire. 3. Fill tank with clean, fresh gasoline. 4. Clear vent. 5. Drain fuel tank. Refill with fresh fuel. 6. Clean air cleaner as instructed in separate engine manual. 7. Adjust carburetor as instructed in separate engine manual.
Engine overheats	<ol style="list-style-type: none"> 1. Engine oil level low. 2. Air flow restricted. 3. Carburetor not adjusted properly. 	<ol style="list-style-type: none"> 1. Fill crankcase with proper oil. 2. Remove blower housing and clean as instructed in separate engine manual. 3. Adjust carburetor as instructed in separate engine manual.
Tines do not engage	<ol style="list-style-type: none"> 1. Foreign object lodged in tines. 2. Tine clevis pin(s) missing. 3. Control cable not adjusted properly. 4. Belt worn and/or stretched. 	<ol style="list-style-type: none"> 1. Dislodge foreign object. 2. Replace tine clevis pin(s). 3. Adjust control cable (see assembly instructions). 4. Replace belt.
Wheels do not engage	<ol style="list-style-type: none"> 1. Control cable not adjusted properly. 2. Belt worn and/or stretched. 	<ol style="list-style-type: none"> 1. Adjust control cable (see assembly instructions). 2. Replace belt.

NOTE: For repairs beyond the minor adjustments listed above, please contact your local service dealer.